

### REMARKS

Applicants thank the Examiner for total consideration given the present application. Claims 1-18 are currently pending of which claims 1 and 5 are independent. Claims 1 and 5 have been amended through this Reply. Upon careful review, one would conclude that this amendment does not raise any new issue nor does it add any new matter to the application. Support for this amendment can be found at least in paragraph [0089] of the instant specification. Applicants respectfully request reconsideration of the rejected claims in light of the amendment and remarks presented herein, and earnestly seek timely allowance of all pending claims.

#### 35 U.S.C. § 103 REJECTION – Maier-Laxhuber, Takahashi

The Examiner rejects claims 1-18 under 35 U.S.C. § 103(a) as allegedly being unpatentable over Maier-Laxhuber in view of Takahashi et al. (U.S. Patent No. 6,346,298)[hereinafter “Takahashi”]. Applicants respectfully traverse these rejections.

Applicants respectfully submit that the Examiner has failed to establish a *prima facie* case of obviousness. To establish a *prima facie* case of obviousness, the prior art reference (or references when combined) must teach or suggest all the claim limitations. *In re Vaeck*, 947 F.2d 488, 20 USPQ2d 1438 (Fed. Cir. 1991). Additionally, there must be a reason why one of ordinary skill in the art would modify the reference or combine reference teachings to obtain the invention. A patent composed of several elements is not proved obvious merely by demonstrating that each of its elements was, independently, known in the prior art. *KSR Int'l Co. v Teleflex Inc.*, 82 USPQ2d 1385 (U.S. 2007). There must be a reason that would have prompted a person of ordinary skill in the relevant field to combine the elements in the way the claimed new invention does. *Id.* The Supreme Court of the United States has recently held that the "teaching, suggestion, motivation test" is a valid test for obviousness, albeit one which cannot be too rigidly applied. *Id.* *Rejections on obviousness grounds cannot be sustained by mere conclusory statements; instead, there must be some articulated reasoning with some rational underpinning to support the legal conclusion of obviousness.* *Id.*

In this instance, it is respectfully submitted that neither Maier-Laxhuber nor Takahashi, alone or in combination teach or suggest, *inter alia*, “the adsorbent layer selects the binder so

**that linear thermal expansion coefficient of a material for the fins is between linear thermal expansion coefficient of the adsorbent and linear thermal expansion coefficient of the binder**

as recited in amended claims 1 and 5.

As acknowledged by the Examiner, Maier-Laxhuber fails to specifically point out the relationship between the linear thermal expansion coefficient of the adsorbent layer and the linear thermal expansion coefficient of the fins. Thus, the Examiner imports Takahashi to fulfill this deficiency of Maier-Laxhuber.

Even if, *assuming arguendo*, there is sufficient motivation to combine Maier-Laxhuber and Takahashi (which Applicants respectfully disagree), the combined invention would not render claims 1 and 5 obvious for the following reasons.

Linear thermal expansion coefficient of the fins largely differs from linear thermal expansion coefficient of the adsorbent (zeolite). Therefore, when the heat exchanger is heated or cooled, thermal strain of the fins completely differs from thermal strain of the adsorbent. As a result, the adsorbent layer falls off the fins.

In the claimed invention, the binder is selected so that linear thermal expansion coefficient of a material for the fins **is between linear thermal expansion coefficient of the adsorbent and linear thermal expansion coefficient of the binder** in order to prevent the adsorbent layer from falling off.

By contrast, Takahashi teaches that linear thermal expansion coefficient of an entire resin layer 2 **is larger** than linear thermal expansion coefficient of a metal foil 1, and the linear thermal expansion coefficient of a resin layer 2 is determined to render the metal foil 1 convex. Thus, it is respectfully submitted Takahashi cannot teach or suggest, *inter alia*, **“the adsorbent layer selects the binder so that linear thermal expansion coefficient of a material for the fins is between linear thermal expansion coefficient of the adsorbent and linear thermal expansion coefficient of the binder”** as recited in amended claims 1 and 5.

Therefore, for at least the above reasons, it is respectfully submitted that claims 1 and 5 are distinguishable from Maier-Laxhuber and Takahashi. Claims 2-4 and 6-18 are

distinguishable from Maier-Laxhuber and Takahashi at least by virtue of their dependence on corresponding independent claim and further in view of novel features recited therein.

Accordingly, it is respectfully requested to withdraw the rejection of claims 1-18, based on Maier-Laxhuber and Takahashi.

### CONCLUSION


In view of the above amendment, Applicants believe the pending application is in condition for allowance.

Should there be any outstanding matters that need to be resolved in the present application, the Examiner is respectfully requested to contact Ali M. Imam Reg. No. 58,755 at the telephone number of the undersigned below, to conduct an interview in an effort to expedite prosecution in connection with the present application.

If necessary, the Commissioner is hereby authorized in this, concurrent, and future replies to charge payment or credit any overpayment to Deposit Account No. 02-2448 for any additional fees required under 37.C.F.R. §§1.16 or 1.147; particularly, extension of time fees.

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Respectfully submitted,

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